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IPS Fab.

Gen. Ins. 1776, p. 23.

I. obtusus Say, Bost. Journ. i, p. 168.
I. fasciatus Oliv. Ent. ii, 12, p. 7, pl. 2, fig. 13; Say, loc. cit. p. 169.
    quadrisignatus Say, loc. cit. p. 169.
    bipustulatus Mels. Proc. Acad. ii, p. 108.
    sexpustulatus Reitter, Verh. Naturf. Ver. Brünn, xii, p. 161.
I. sanguinolentus Oliv. loc. cit. p. 8, pl. 2, fig. 14; Say, loc. cit. p. 169.
    rubromaculatus Reitter, loc. cit. p. 161.
I. confluentus Say, Journ. Acad. iii, p. 195.
I. vittatus Say, Bost. Journ. i, p. 170.
    Dejeani Kby. Fauna Bor. Am. iv, p. 107, pl. 2, fig. 4.
    sepulchralis Rand. Bost. Journ. ii, p. 19.
I. cylindricus Lec. New Species, 1863, p. 64.

PITYOPHAGUS Shuck.

Illust. Brit. Col. p. 25.

P. cephalotes Lec. Proc. Acad. 1860, p. 377.
P. rufipennis Horn, Trans. Am. Ent. Soc. 1872, p. 146.
P. verticalis n. sp.

RHIZOPHAGINI.

RHIZOPHAGUS Hbst.

Die Kæfer, v, p. 18.

Rh. scalpturatus Mann. Bull. Mosc. 1852, ii, p. 362.
Rh. cylindricus Lec. Proc. Acad. 1866, p. 377.
Rh. dimidiatus Mann. Bull. Mosc. 1843, p. 300.
Rh. brunneus Horn, Proc. Am. Philos. Soc. 1878, p. 308.
Rh. bipunctatus Say, (*Cblydium*), Journ. Acad. iii, p. 324; Lec. Proc. Acad. 1866, p. 377.
Rh. approximatus Lec. loc. cit. p. 378.
Rh. remotus Lec. loc. cit. p. 378.
Rh. minutus Mann. Bull. Mosc. 1853, iii, p. 206.

Notes on the MYCTERIDÆ and other Heteromera.

BY GEORGE H. HORN, M. D.

A number of specimens of MYCTERUS having been lately added to my cabinet, some collected by Morrison in western Nevada, and several others from C. F. Gissler from New Mexico, there is now sufficient material to give the species some definite characters. The following table will enable them to be separated in a preliminary way.

Thorax broader at base, as wide as the base of the elytra.
  Legs in great part and antennæ yellow.
    Posterior legs piceous..**canescens** n. sp.
    All the legs yellow..**scaber** Hald.
  Legs, antennæ and clypeus piceous..**concolor** Lec.
Thorax not broader at base, narrower than the base of elytra.
  Legs, antennæ and mouth yellow..**quadricollis** Horn.

The above color characters although trivial are constant and answer well for both sexes. The sexual characters are worthy of special mention, these furnish the true basis of specific separation. The new species is briefly as follows:

M. canescens n. sp.—Black, clothed with fine short grey pubescence, antennæ, clypeus and legs (except the posterior), yellow. Head and thorax densely and finely punctured, opaque; thorax as broad at base as the elytra, a fine basal impression in front of scutellum, another deeper each side. Elytra coarsely and moderately densely punctured, punctures finer toward the apex. Body beneath moderately densely and finely punctured and with grey pubescence. Length .12—.26 inch; 3—6.5 mm.

Male.—Smaller than the ♀. Antennæ subserrate, the joints always as long as broad. Intercoxal process of abdomen with a moderately elevated tubercle, the surface of which is nearly smooth.

Female.—Larger than ♂. Antennæ slender. No intercoxal tubercle.

This species is that mentioned by me as the ♂ of *concolor*, (Trans. Am. Ent. Soc. 1868, p. 137), having at that time but two females of *concolor* and two males of the present, there did not seem to be sufficient reason for separating them. Superficially the species greatly resembles *scaber*, but may be known by the sexual characters and the dark hind legs.

Occurs from the Sierras of western Nevada, southward to Keyesville, California.

M. scaber Hald., Proc. Acad. 1843, p. 308.

Male.—Antennæ with third joint broadly triangular, 4—10 transverse, but gradually less so to tip. Intercoxal process with a moderately prominent umbone with pubescent summit.

Female.—Third joint of antennæ elongate, joints 4—10 subserrate.

Occurs in the Atlantic States.

M. concolor Lec., Proc. Acad. 1853, p. 235.

var. flavipennis Horn, Trans. Am. Ent. Soc. 1868, p. 136.

Male.—Antennæ slender, third joint elongate, joints four and six shorter respectively than five and seven. Intercoxal process with a large flattened umbone, extending the length of the segment, finely transversely strigose like a stridulating plate.

Female.—Antennæ as in the ♂ but the joints 4—10 are gradually shorter, eleventh elongate as usual.

I refer to *concolor* a number of specimens collected by Morrison in Nevada, although they are somewhat more densely punctured and opaque. *M. flavipennis* Horn, under this determination is a synonym, the yellow elytra counting for nothing. I have several females with yellow elytra but the males and about half the females are piceous.

Occurs in Colorado, New Mexico and western Nevada.

M. quadricollis Horn, Trans. Am. Ent. Soc. 1874, p. 42.

Male.—Third joint of antennæ elongate, joints 4—10 as broad as long, trapezoidal. Segments 1—4 with a small patch of brownish pubescence at middle near posterior border. Last ventral segment longer than the preceding, broader also than usual, and with a slight emargination. Elytra obliquely subtruncate at tip.

Female.—Antennæ feebly subserrate. Elytra rounded at tip.

The specimens collected by Crotch had yellow elytra. I have two from New Mexico, entirely piceous above. This species is known by the narrower thorax, vaguely impressed above.

Occurs in California, (Temescal), and New Mexico.

The last named species bears the same relation to the others that the species of *Magdalis* do among themselves, those *Mycterus* with the thorax broadest at base resembling *Magd. Lecontei*, while *quadricollis* represents *Magd. barbita*. Closely allied to *Mycterus* but differing by several important characters is

LACCONOTUS Lec.

Here the head is not elongated and the palpi shorter although of similar structure. The elytral epipleuræ do not reach the tip. First segment of abdomen shorter than the second. Tibiæ without terminal spurs.

Two species are known.

Black, thorax reddish-yellow with median black space.........**punctatus** Lec.
Piceous, elytra less coarsely punctured than the thorax.........**pinicola** n. sp.

L. punctatus Lec., Class. Col. N. A. p. 255.—Moderately elongate, black, sparsely pubescent, thorax red with discal black space. Head densely punctured, black. Thorax quadrate, sides feebly arcuate in front, surface coarsely punctured, disc slightly impressed each side of middle. Elytra coarsely and densely punctured. Body beneath (and legs) black, sparsely punctate. Length .17—.22 inch; 4.25—5.5 mm.

Male.—Second abdominal segment notably longer than the third and at middle more convex, smooth and testaceous, recalling the tubercle of *Myc. canescens* but larger.

It is interesting to find a similarity of sexual characters between this and three of the *Mycterus*, although the tubercle is on the second instead of the first segment.

Canada, Michigan, Pennsylvania, very rare.

L. pinicola n. sp.—Piceous or black, elongate, moderately shining, sparsely pubescent. Head densely punctured, antennæ and mouth rufous. Thorax quadrate, sides feebly arcuate in front, disc densely punctured and with a very vague oblique impression each side. Elytra broader than the thorax, nearly five times as long, slightly broader behind the middle, moderately densely and more finely punctured than the thorax. Body beneath moderately densely and finely punctured. Length .22—.26 inch; 5.5—6.5 mm.

Male.—Second ventral segment with a small oval elevated space covered with short brownish pubescence.

This species differs from the preceding in the form of the antennæ, here they are a little longer than the head and thorax, the joints rather slender and longer than wide. In *punctatus* the antennæ equal the head and thorax, the joints flattened, as broad as long and subserrate.

Four specimens, Colorado and western Nevada, (Morrison).

The Mycteridæ seem to have been cast about from place to place by the various students who have had occasion to write about them. Schmidt and Lacordaire have placed them in the Oedemeridæ with which the latter author acknowledges they have many important differences. Following them the German authors adopt the same opinion, while Latreille associated *Salpingus* and *Rhinosinus* with *Mycterus* as a separate family. The doubts expressed by Lacordaire together with the evidence given by Dr. Leconte, (Class. p. 254), are sufficient to show the impropriety of associating *Mycterus* with the Oedemeridæ. A study of the characters seems to narrow the affinities of the Mycteridæ to a close relationship with the Melandryidæ and Pythidæ, and in that position we find them placed by Dr. Leconte as a separate family. From the former family it differs simply in the middle coxæ being enclosed by the sterna without trochantin, the lobed penultimate joint of the tarsi existing in various degrees in several genera while the toothed claws are found in *Nothus*. The lobed tarsi and toothed claws are not found in the Pythidæ although the coxal character is. Therefore the affinity seems more strong in the direction of the Melandryidæ. Giving additional weight to this is a character of small importance, the slight impression of the base of thorax on each side of the middle which also exists in all Melandryidæ even *Nothus* and *Stenotrachelus*. To my mind *Mycterus* and *Lacconotus* bear the same relationship to the Melandryidæ that *Rhinosinus* and *Salpingus* do to the Pythidæ. It seems to me to be still an open question as to whether the Pythidæ and Melandryidæ should remain separated.

Here seems a proper place to notice the occurrence of a new species of

NOTHUS Oliv.

N. luteus n. sp.—Moderately elongate, yellowish testaceous, sparsely pubescent. Head densely punctured. Thorax a little wider than long, sides feebly arcuate, margin posteriorly feebly explanate and slightly reflexed, base squarely truncate, disc moderately convex, densely and rather coarsely punctured. Elytra a little wider than the thorax, parallel, as densely punctured as the thorax but a little more coarsely. Body beneath moderately densely punctured. Length .32 inch; 8 mm.

The specimen before me is a male, at least it has the trifid claws and the elongated last ventral segment, but the posterior tibiæ have no spine.

Its color, punctuation and size will distinguish it from *varians*.

Occurs in southeastern California.

EXPLANATION OF PLATE III.

Fig. 1.—*Smicrips palmicola* Lec.; *a*, underside; *b*, mentum and mouth beneath; *c*, maxilla; *d*, mandible; *e*, antenna; *f*, tarsus.

Fig. 2.—Claw of *Brachypterus*.

Fig. 3.—Claw of *Amartus*.

Fig. 4.—Maxilla of *Amartus tinctus* Mann., (after Murray).

Fig. 5.—*Anthonæus agavensis* (Crotch).

Fig. 6.—Thorax and pygidium ♂ and ♀ of *Cercus pennatus* Murr.

Fig. 7.—Last ventral ♂ *Colastus maculatus* Er.; *a*, sexual segment protruded.

Fig. 8.—Thorax of *Soronia grisea* Linn.

Fig. 9.—Same of *S. guttulata* Lec.

Fig. 10.—Thorax of *Conotelus obscurus* Erichs.

Fig. 11.—Same of *C. stenoides* Murr.

Fig. 12.—Thorax beneath of *Cryptarcha ampla* Erichs.; *a*, maxilla; *b*, mentum and ligula.

Fig. 13.—Head beneath of *Prometopia sexmaculata* Say.

Fig. 14.—*Psilopyga histrina* Lec.; *a*, *b*, *c*, tibiæ of *P nigripennis* Lec.

Fig. 15.—*Cybocephalus nigritulus* Lec., nerved laterally; *a*, outline above.

Fig. 16.—Elytral markings of *Ips confluentus* Say.

Fig. 17.—Same of *I. vittatus* Say.

Fig. 18.—*a*, *b*, *c*, tibiæ of *Cychramus Zimmermanni* Horn; *d*, *e*, *f*, same of *C. adustus* Er.

Fig. 19.—Middle tibia ♂ *Epuraea rufida* Mels.; *b*, same of *E. monogama* Crotch, with tarsus.

Fig. 20.—Posterior tibia ♂ *Epuraea luteola* Erichs.

Fig. 21.—Posterior tibia ♂ *Carpophilus antiquus* Mels.

Fig. 22.—Middle and posterior tibia ♂ *Stelidota geminata* Say.

Fig. 23.—Head, showing epistoma and labrum of *Ips obtusus* Say; *a*, middle and posterior tibia ♂; *b*, same of ♀.

Fig. 24.—*Orthopeplus quadricollis* Horn.

Fig. 25.—*Perthalycra Murrayi* Horn.

Fig. 26.—Maxilla of *Rhizophagus* (after Murray).

Fig. 27.—Thorax beneath *Pityophagus rufipennis* Horn.

Fig. 28.—*Brachypeplus glaber* Lec.

The sketches above have been drawn from nature from dissections made by myself, except 4 and 26 which are from Murray whose details are reliable.

G. H. H.

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Plate III.